

REMARKS

Claims 1-7 and 9 are pending in this application. Claims 1 and 4 have been amended by the present amendment. The amendments are fully supported by the specification as originally filed. As amended, claim 1 incorporates the subject matter of claim 8, which has been canceled.

Applicant's invention is directed to a semiconductor package having a chip and a passive device mounted on a first side of a substrate. A flash-proof device is attached to the first side of the substrate, allowing the chip and passive device to be received in a cavity of the flash-proof device. As recited in claim 1, a distance in elevation from a top side of the flash-proof device to the first side of the substrate is slightly greater than a depth of a molding cavity of an encapsulation mold used in a molding process.

During molding, the substrate can be tightly clamped between the flash-proof device and the encapsulation mold, where the top side of the flash-proof device abuts against an upper mold. As such, a second side of the substrate hermetically abuts against a lower mold. Based on the claimed elevation-to-depth arrangement of the flash-proof device and the molding cavity, the molding compound will encapsulate the chip and passive device, while leaving the top side of the flash-proof device and the second side of the substrate exposed to outside the encapsulant, such that the second side of the substrate is free of flash of the molding compound.

Therefore, as recited in claim 1, according to the claimed elevation-to-depth arrangement of the flash-proof device and the molding cavity, the molding compound is prevented from flashing on the second side of the substrate, thereby solving the problem of **resin flash**.

Claims 1, 4, 6, and 8 were rejected under 35 USC 103(a) as being unpatentable over "AAPA" in view of U.S. Patent 6,191,360 to Tao et al. (hereinafter "Tao"). Claims 2, 3, and 9 were rejected under 35 USC 103(a) as being unpatentable over "AAPA" in view of Tao, and further in view of U.S. Patent 6,392,900 to Petty et al. Claim 5 was rejected under 35 USC 103(a) as being unpatentable over "AAPA" in view of Tao, and further in view of U.S. Patent 6,069,027 to Mertol et al. Claim 7 was rejected under 35 USC 103(a) as being unpatentable over

"AAPA" in view of Tao, and further in view of U.S. Patent 6,294,831 to Shishido et al. These rejections are respectfully traversed, and for convenience are addressed together.

As discussed in the Amendment of April 18, 2003, the Background section of Applicant's specification fails to teach or suggest a **flash-proof device** attached to the first side of a substrate, as recited in claim 1.

Tao discloses a thermally enhanced BGA package having a heat spreader 34 mounted on a substrate 30 (see column 2, lines 61-63; FIG. 3). The heat spreader 34 covers a chip 33 mounted on the substrate 30, thereby dissipating heat and shielding the chip 33 from electromagnetic interference (see column 1, lines 59-67).

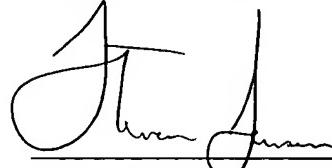
Tao does not teach or suggest the elevation-to-depth arrangement recited in claim 1 of the Applicant's invention for preventing **resin flash** on the substrate. With reference to FIG. 3 of Tao, a top part 37 of the heat spreader 34 is exposed, whereas in FIGS. 8 and 9, the heat spreader 63, 73 is entirely encapsulated by an encapsulant 66, 76. Therefore, in Tao, it is not necessary for a distance from the top part of the heat spreader to the substrate to be greater than a depth of a molding cavity. Tao does not teach or suggest a flash preventing mechanism to ensure that the second side of the substrate 30 is free of flash. In fact, Tao does not address the problem of resin flash, which is solved by the Applicant's claimed invention.

Therefore, even if Tao were somehow combined with "AAPA," it would not be possible to produce the Applicant's claimed invention. The combination of "AAPA" in view of Tao does not teach or suggest at least the above-referenced features of claim 1. Accordingly, claim 1 and dependent claims 2-7 and 9 should be in condition for allowance.

On page 6 of the Office Action, the Examiner stated that "the features upon which applicant relies (i.e., Tao does not address the problem of resin flash) are not recited in the rejected claim(s)." As amended, claim 1 incorporates features of the Applicant's invention relating to prevention of resin flash.

It is believed the application is in condition for immediate allowance, which action is earnestly solicited.

Respectfully submitted,



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